

Should I Grow My Own Seedlings?

Growing seedlings at home can be a fun and rewarding hobby for the entire family. You may wish to grow your own seedlings for many reasons: 1) the annual seedling needs for your tree or Christmas tree farm are less than the minimum quantities a commercial nursery is willing to grow; 2) you want specific seed sources or an uncommon species not available from state and private growers; 3) you wish to grow seedlings for fun, realizing the satisfaction of personally reforesting some of your land, improving wildlife habitat, having a novel school project, growing your own Christmas trees, or just because you love the challenge of growing plants.

If you enjoy growing plants, you're more likely to produce higher quality seedlings than if you find the work tedious and uninteresting. So, if you're still interested in growing your own seedlings, we assume you desire to grow them for personal use and pleasure. We intend to give basic biology and simple, but effective techniques so you can successfully grow

seedlings at home. In this booklet we focus on conifer (evergreen) seedlings found in the Pacific Northwest, but the same techniques can be used to grow other woody plants from other regions too.

However, if you're interested in developing a nursery business, this booklet isn't for you. It provides only a brief idea of what's involved with growing seedling crops, and you'll need to consult more professional literature to fully understand the business, science, and art of growing seedlings (see Appendix 6.6, Beyond the Basics). Growing seedlings

"For though it seem but a trivial design that one should make a nursery of foresters; yet it is not to be imagin'd, without the experience of it, what prodigious numbers a very small spot of ground well cultivated, and destin'd for this purpose, would be able to furnish towards the sending forth of yearly colonies into all the naked quarters of a lordship... ..for timber, shelter, fuel, and ornament, to an incredible advantage. This being a cheap, and laudable work, of so much pleasure in the execution, and so certain a profit in the event; to be but once well done..."

John Evelyn, 1664

professionally requires specialized equipment beyond the scale of most hobby growers.

1.1 The Right Tree for the Right Place

Although many people think that all plants of the same species are alike, they are actually very different both morphologically (how they look) and physiologically (how they function). Native plants have adapted to their environment over geological time and will therefore grow best under these conditions. In some widely-distributed species, such as Douglas-fir, a species will be taxonomically separated into different varieties or ecotypes in different geographical and climatic regions. For example, there are two varieties of Douglas-fir listed in *Seeds of Woody Plants in the United States*: Rocky Mountain Douglas-fir and coast Douglas-fir. However, even if there is no official designation, native plant species will vary from location to location, and you must be aware of these differences.

The reason this concept is important to discuss here is that moving a plant from one environment to

another induces stress and, in many cases, will result in poor growth and eventual death. The same goes for growing plants from seed collected in one region and outplanting them in another. The “take-home lesson” is that you must consider where you want to permanently plant seedlings before you begin to grow them.

In forestry nurseries, we talk about the “target seedling”—a plant with the morphological characteristics (like height, stem caliper, and root volume) and physiological characteristics (like dormancy status and cold hardiness) needed to maximize survival and growth for a particular outplanting site. For example, a Douglas-fir seedling being grown for reforestation on an outplanting site at 1,500 feet of elevation in the Coast Range of Oregon would be much different from one

being grown for a site at 4,000 feet in northern Idaho (Figure 1.1). These two seedlings may not look that much different, but they would be very different physiologically, especially in terms of time to budbreak and amount of cold hardiness. Another grower might want to grow a special blue-green ecotype of Douglas-fir for Christmas trees. These seedlings have the necessary form and color that people like for Christmas trees but would not be well-suited for reforestation purposes.

Another aspect of the target seedling concept that is often overlooked is the type of outplanting tool. Continuing on with our previous example, the outplanting tool used in a Douglas-fir Christmas tree plantation would be much different from that used by tree planters on a steep mountainous reforestation site. In the first case, the

Christmas tree grower might use an auger to outplant his stock because the site is relatively flat, the soil is deep, and there are few rocks. Therefore, the target seedling for the Christmas tree plantation could have a large shoot and long fibrous roots. On the other hand, many reforestation sites have relatively shallow, rocky soils so planters use a “hoe-dad” planting tool that can only make a planting hole about 10 to 12 inches deep. The target seedling for this type of reforestation site, therefore, would have roots no longer than 10 inches and a shorter shoot with large stem diameter to withstand mechanical and physiological stresses.

Remember, it’s important to always consider the conditions on the outplanting site and the type of planting tool that will be used before starting your nursery crop.

“There is no occasion for a very scientific or elaborate description of the different methods employed in propagation of forest trees being given in a simple treatise like this. That they may be propagated in various ways is true, but the man who desires to grow only the native or more common exotic forest trees has no occasion to study the mysteries of horticultural science. I am well aware that it has been generally supposed among the farmers that it was only nurserymen that were able to grow such trees successfully; but this is an error; or, at least, if they do succeed better than others, it is only because they have given more attention to the subject; as it does not require any more skill to grow an acre of our common forest trees than it does to grow an acre of cabbage or corn.”

Andrew S. Fuller, 1866



FIGURE 1.1

Target seedling considerations include species, ecotype, stock type, and type of outplanting tool. These large Douglas-fir seedlings being planted by shovel in the Coast Range of Oregon would differ considerably from Douglas-fir outplanted with a hoe-dad in the mountains of northern Idaho.

